CDF 1200 Ton Shielding Door Move Procedure

This procedure outlines the requirements for the movement of the 1200 ton shielding door which is used to isolate the CDF collision and assembly halls from one another. The controlling documents for this procedure will be in the form of two checklists: (1) a door opening checklist, and (2) a door closing checklist. The appropriate checklist shall be completed for each door moving operation. Completed checklists will be kept in a binder located in the CDF Main Control Room.

Editorial Hand-Processed Changes Other Than Spelling
Require Department Head Approval

HPC Number	Date	Section Number	Initials
1.			
2.			
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Approvals:

_____ _____
(CDF Department Head) (Date)

_____ _____
(Particle Physics Division Head) (Date)

_____ _____
(Beams Division Head) (Date)

1.0 Controlled Copies of this procedure.

Two controlled copy of this procedure will exist.

It will be held in the CDF Department Office.

The other will be on the CDF web page.
http://www-cdf.fnal.gov/cdfsafe/cdfproclist.html

All other copies will be marked, " INFORMATIONAL COPY ONLY "

2.0 Procedure

The procedural details of the move operation are contained in the “1200 Ton Door Opening Checklist” in Appendix One and the “1200 Ton Door Closing Checklist” in Appendix Two of this document.

3.0 Checklist

The “1200 Ton Door Opening Checklist” form (Appendix One of this procedure) or the “1200 Ton Door Closing Checklist” form (Appendix Two of this procedure) are the controlling documents for each door move. Completed checklists shall be kept in a binder in the CDF Main Control Room.

4.0 Deviations from the Procedure

Any deviations from this procedure must be approved by Harry Carter, Dick Worland, John Voirin, Pat Lukens, or the CDF Operations Manager and so noted in the comments section of the checklist governing that specific operation.

5.0 Required Training and Authorized Training Personnel.

There is no prerequisite training for this procedure.

Authorized training personnel are listed below:

Harry Carter, ID# 3236
Richard Worland, ID#1952
John Voirin, ID#4940

6.0 Training Materials.

A copy of this Procedure.

7.0 List of Trained Personnel for this procedure.

The list of trained personnel for this procedure will exist in written form in the CDF Department copy of this procedure.

Harry Carter
Craig Olson (operator)
Wayne Shaddix
John Voirin (operator)
Dick Worland

This list may eventually reside in a Lab-wide database as well.

8.0 References and Supporting Documentation.

References: JHA - Opening the 1200 Ton Shielding Door

Supporting Documentation: None.

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Appendix One: 1200 Ton Door Opening Checklist

The minimum number of personnel required to conduct this operation is four, at least two of which must have participated in prior door move operations. A experienced equipment operator, whose function is to operate the unified hydraulic jacking system controls and to watch for any problems, is required. The move supervisor will assure that the checklist is followed and that all operations are conducted in a safe, efficient manner. Remaining personnel are to assist the supervisor in any way required. During the move operation, no other work is to be performed in the immediate area around the equipment being moved.

Date of Move Operation: _____

Printed Name of Equipment Operator: _____

Printed Name of Move Supervisor: _____

Printed Name of Workers: _____

Printed Name of Person Completing This Checklist: _____

I. Preparation for Move

___ A. Verify that all personnel are wearing eye protection.

___ B. Notify the Beams Division RSO that the door is to be opened, and request that the locks be removed from the hinged doors on the top of the shielding door to facilitate removal of the polyethylene bead bags.
Unplug both wall-mounted radiation monitors (wall flowers plugged into the ceiling).

___ C. In the collision hall, disconnect the sprinkler piping connection to the door.
Unplug the fluorescent lighting mounted on the door.

___ D. Clean the floor and steel rails. Remove the blue protective caps from the screw and pin holes in the steel rails. Vacuum any foreign material from all holes. Chase threaded holes with a tap if needed.

___ E. Connect the push/pull brackets to the door.

___ F. Using the large orange Simon lift, remove all of the polyethylene bead bags from the top of the door. Store the bags in the wooden boxes at the east end of the door “garage” area.

___ G. Connect the push/pull cylinders to the connection points on the push/pull brackets for the door.

___ H. Connect the unified jacking system to the installed push/pull cylinders and to the four hydraulic jacks of the door lifting system.

___ I. Verify the alignment of the four hilman rollers for a move in the northerly direction. Raise the door and adjust the hilmans for a straight pull.

___ J. While the door is raised, remove the four sets of aluminum shim packs from under the door and stack them on the north door ledge for storage.

___ K. Lower the door to place the load on the aligned hilman rollers.

(over)

I. Preparation for Move (continued)

___ L. Verify that no obstructions prevent the door movement. Inspect the top of the door to assure that nothing has been placed on it and that no cables or lines have been draped over it. **Note: The concrete shielding on the top east end of the door may remain installed as long as the door is not to be moved in a westerly direction.**

II. Move Operation

The door will be moved in a northerly direction until it is properly aligned for an easterly move toward the “garage” area. Only one push/pull cylinder is needed to move the door to the east, while two push/pull cylinders are used to move to the north. One worker is positioned at each push/pull cylinder, the operator is stationed at the unified jacking system, and the move supervisor positions himself so that he can observe the operation of both push/pull cylinders and act as a signalman to the operator.

___ A. Move the door as described above until it is in the garaged position (far enough east so as not to obstruct the central detector movement).

III. Secure from Move Operation

___ A. Disconnect the push/pull cylinder from the door mounted bracket by pulling the large pin. Fully retract the push/pull cylinder ram.
___ B. Disconnect all hydraulic hoses and store them on the unified system hose reel.
___ C. Remove the push/pull cylinder to a secure location and store.
___ D. Replace the blue protective covers in the steel rail screw and pin holes.
___ E. Place the completed checklist in the three-ring binder in the CDF Main Control Room.

End of Checklist

Appendix Two: 1200 Ton Door Closing Checklist

The minimum number of personnel required to conduct this operation is four, at least two of which must have participated in prior door move operations. A experienced equipment operator, whose function is to operate the unified hydraulic jacking system controls and to watch for any problems, is required. The move supervisor will assure that the checklist is followed and that all operations are conducted in a safe, efficient manner. Remaining personnel are to assist the supervisor in any way required. During the move operation, no other work is to be performed in the immediate area around the equipment being moved.

Date of Move Operation: _____

Printed Name of Equipment Operator: _____

Printed Name of Move Supervisor: _____

Printed Name of Workers: _____

Printed Name of Person Completing This Checklist: _____

I. Preparation for Move

___ A. Verify that all personnel are wearing eye protection.
___ B. Clean the floor and steel rails. Remove the blue plastic caps from the screw and pin holes in the steel rails. Vacuum any foreign material from all holes.
___ C. Connect one push/pull cylinder to the south connection point on the west end of the door.
___ D. Connect the unified jacking system to the installed push/pull cylinder and to the hydraulic jacks of the door lifting system.
___ E. Verify the alignment of the four hilman rollers for a move in the westerly direction. Adjust as necessary for a straight pull.
___ F. Verify that no obstructions prevent the door movement. Inspect the top of the door to assure that nothing has been placed on it and that no cables or lines have been draped over it.

II. Move Operation

The door will be moved in a westerly direction until it is properly aligned for a southerly move toward the collision hall. Only one push/pull cylinder is needed to move the door to the west, while two push/pull cylinders are used to move to the south. One worker is positioned at each push/pull cylinder, the operator is stationed at the unified jacking system, and the move supervisor positions himself so that he can observe the operation of the push/pull cylinders and act as a signalman to the operator.

(over)

II. Move Operation (cont.)

___ A. Using the unified jacking system, move the door to its final (closed) position as indicated by the assembly hall side of the door aligning with the red lines painted on the east and west walls.
___ B. When in position, raise the door to facilitate the installation of the four aluminum shim packs beneath the door.
___ C. Lower the door so that it is resting on the four shim packs. Retract the jacks until all are in the full up position. The move operation is now completed.

III. Secure from Move Operation

___ A. Disconnect the push/pull cylinders from the door mounted brackets by pulling the large pins. Fully retract the push/pull cylinder rams.
___ B. Disconnect all hydraulic hoses and store them on the unified system hose reel.
___ C. Remove the push/pull cylinders and the door mounted brackets to a secure location and store.

IV. Final Door Closing Work

___ A. Using the orange Simon platform lift, place all of the hand stacked bags of polyethylene bead on top of the shielding door.
___ B. Close the hinged doors and secure them. . If the Beams Division locks are available, lock the doors and notify the Beams Division RSO that they have been secured. If no locks are present, contact the Beams Division RSO and request that the door locks be installed.
___ C. Reverse the vinyl strips on the sides and bottom of the door from their stored position to their installed, sealing positions.
___ D. Plug in the door-mounted radition monitors to the ceiling mounted outlet.
___ E. Rotate the northeast and northwest hilman rollers 90 degrees and install the wooden covers over the openings.
___ F. Replace the blue protective covers in the steel rail screw and pin holes.

In the Collision hall:

___ G. Verify that the Beams Division door-closed position interlock is made up.
___ H. Connect the door-mounted sprinkler piping to the supply line on the west side of the door.
___ I. Plug in the door-mounted fluorescent lighting.
___ J. Place the completed checklist in the three-ring binder in the CDF Main Control Room.

End of Checklist

REFERENCE

Fermilab

CDF JHA/WORK PERMIT

JOB NAME: Opening the 1200 Ton Shielding Door

LOCATION: CDF Assembly Hall

EST. START DATE: 01Nov2000 **EST. JOB DURATION** 2 Days

WORK TO BE PERFORMED BY: CDF Personnel

RESPONSIBLE ENGINEER: Harry Carter **PHONE:** 2458

TASK SUPERVISOR: John Voirin **PHONE:** 3156

DESCRIPTION OF WORK: The 1200 ton shielding door provides an isolation barrier for the large opening between the CDF Collision and Assembly Halls during Tevatron operating periods. This JHA/Work Permit describes the necessary steps for moving the shielding door from its present closed position to its "garaged" position in the assembly hall, thus connecting the two halls. The move is made utilizing the unified hydraulic jacking system as the motive force, the four hydraulic cylinder/Hilman roller combinations at each corner of the 1200 ton door for raising and lowering the door, and the two large push/pull cylinders for moving the door. The work will be performed by a five man in-house CDF crew as listed in the mitigation section below. Procedure # 401, titled "Move the 1200 Ton Door", is the reference procedure for this operation. The general steps involved in the movement of the door are as follows: (1) The door is presently resting on shims which sit on the pit (706' level) floor. Hand stacked shielding in the form of bags of polyethylene beads rest on the top of the door and form a layer approximately two feet thick, covering the entire top surface of the door. (2) Utilizing the large orange lift, personnel remove the hand stacked shielding from the top of the door and place it in the large wooden boxes designed to contain it. The filled boxes are stored along the eastern wall of the garage area. (3) The door is hydraulically raised and the shims are removed, then the door is lowered until the load is resting on the four Hilman rollers which are oriented to facilitate a northerly move. (4) The door is moved in an northerly direction using the push/pull cylinders until it is aligned with the opening for movement in the easterly direction. (5) The door is raised until the load is off the Hilman rollers. (6) The four Hilman rollers are repositioned (rotated 90 degrees) to facilitate movement in the easterly direction. (7) The push/pull cylinders are moved to the west side of the door and attached for pushing in the easterly direction. (8) The door is lowered to place the load back on the Hilman rollers and then moved in an easterly direction until it is fully in the "garaged" position.

ASSOCIATED HAZARDS:

(1) Heavy objects (shielding door weight is 1200 tons) being moved as described above.
(2) Personnel will be working at elevations (both in lift platforms and on top of the door) during the removal of the hand stacked shielding on top of the door once it is in the closed position.
(3) Hydraulic system. Personnel will be working in proximity to hydraulic jacks and lines during lifting and moving operations.
(4) Potential radiation exposure during preparations fir door opening operation.

HAZARD MITIGATION:

(1) Experienced personnel will be conducting the operation as follows:

The task supervisor, John Voirin, will function as crew foreman and will act as signalman to the operator. In the absence of the task supervisor, the responsible engineer will function in this capacity. The responsible engineer has participated in or observed all but one of the door moving operations that have occurred since 1988.

Craig Olson will function as the equipment operator responsible for operation of the unified hydraulic jacking system during lifting, lower-ing, and moving operations.

Wayne Shadix will function as a crew member responsible for monitoring the southwest Hilman roller and corner of the door during all operations.

(2) Personnel operating lifts will be properly trained. Those working on the top of the door will wear OSHA approved harnesses that are tied off to appropriate anchor points.

(3) Eye protection is required while working in proximity to hydraulic systems.

(4) Hand stacked shielding on the top of the door must not be disturbed until the beam-off status of the accelerator has been verified, and the accelerator interlocks have been broken. The PPD area RSO must be notified prior to commencing this operation.

(5) Additional PPE and Monitoring Requirements: Personnel are required to wear hard hats and have film badges in the area of operations.

(6) A pre-operational meeting will be held with the crew members on the first day to discuss the work to be performed. A similar meeting will be held prior to the start of work on each additional day that work covered under this permit is performed.

PREPARED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____

Is work being performed in close proximity to beams division equipment? ___Yes __X_ No

NOTE: Work performed in close proximity to beams division equipment requires their notification and permission to proceed. The contact person is Dave Augustine (x4451, LDP 630-905-5081) or his designee. Indicate below that permission was obtained if it is required for this work permit.

Date of Contact: N/A

Who Contacted: N/A

Permission Granted? _____Yes _____ No

Is a Beams Division representative required to be present during the performance of the work? _____Yes ___X___ No
If yes, indicate name of representative below.

Beams Division Representative: N/A

SIGNATURE LIST OF WORKERS INVOLVED IN THIS TASK

My supervisor has reviewed this Work Plan & Hazard Analysis with me and I understand the hazards and required precautionary actions. I will follow the requirements of this plan or notify my supervisor if I am unable to do so.

Name (print)	ID#	Signature	Date